W-D Round BOILERS

Warneke-Derin[illegible]r Co.

MINNEAPOLIS, MINN.

INTERNATIONAL

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BOILER CATALOGUE

WARNEKE-DERINGER COMPANY

MINNEAPOLIS
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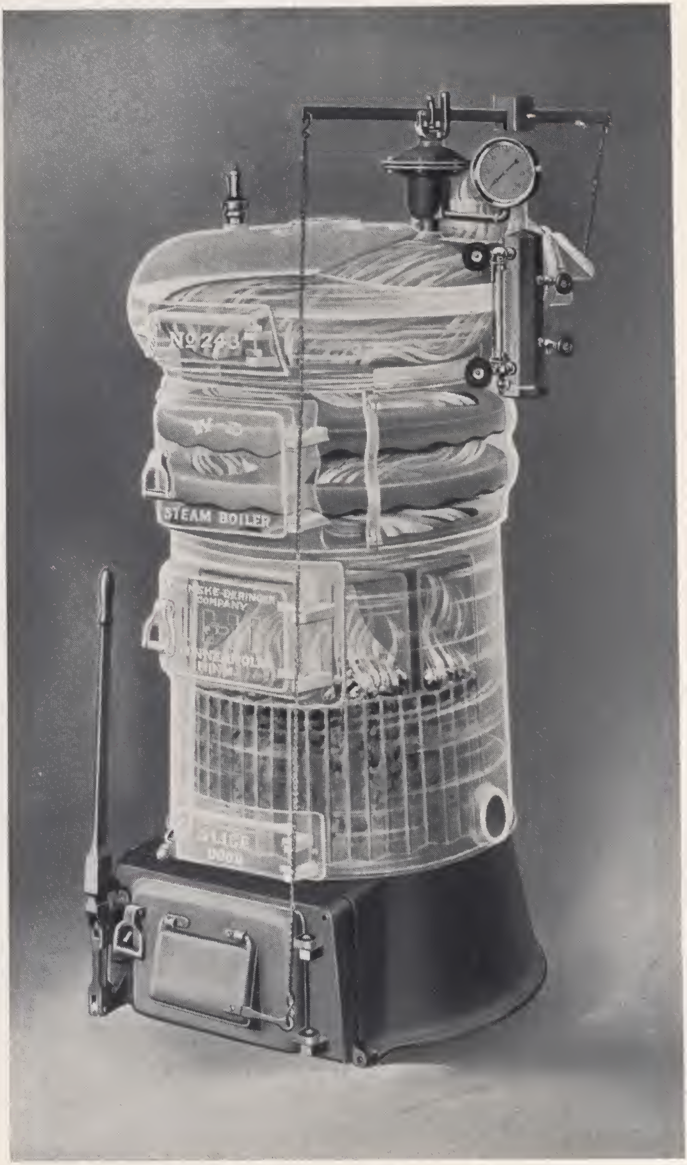
WAREHOUSES
MINNEAPOLIS, MINN.
MILWAUKEE, WIS.

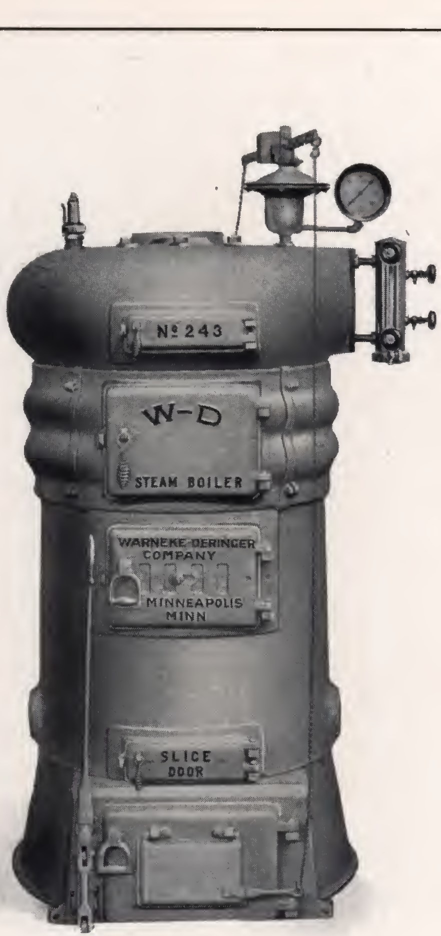

No 243
STEAM BOILER
COMPANY

INTRODUCTION

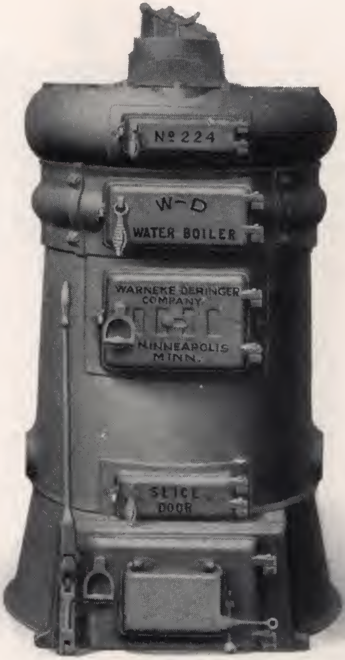
IN presenting our line of "W-D" round boilers for your consideration we wish to state, that, in designing this boiler, we had in mind the development of the greatest possible efficiency per pound of iron used that could be produced in a boiler of this type, and believe that a careful study of our product will convince the conservative purchaser of steam and hot-water boilers that, for a well-designed, properly proportioned boiler, the "W-D" has no equal.

Please note carefully the firepot, grate arrangement, radially corrugated intermediate sections, and dome construction of this boiler as shown on the following pages.

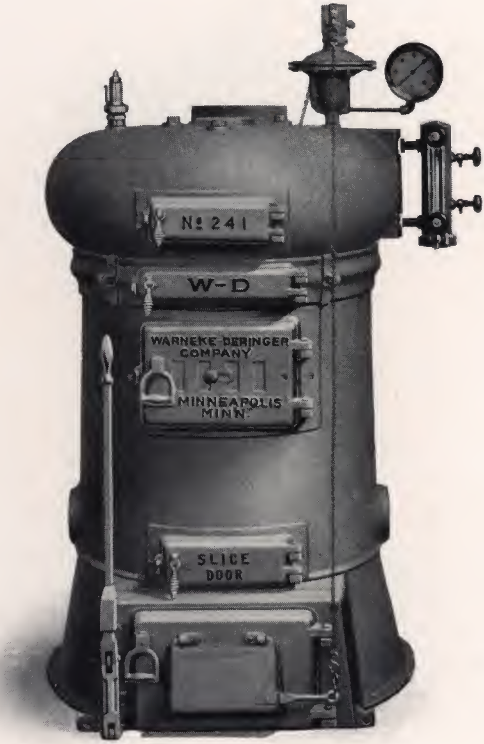
Respectfully yours,
WARNEKE-DERINGER CO.



W-D STEAM BOILER with double dome and two radially corrugated intermediate sections.



W-D WATER BOILER with double dome and one radially corrugated intermediate section.

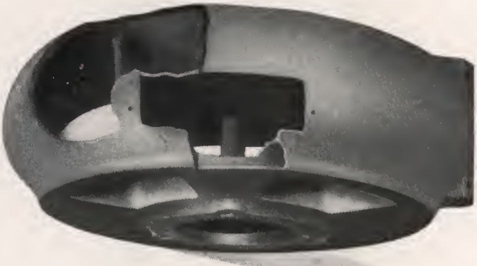


W-D STEAM BOILER with double dome.

THE W-D boiler, for hard or soft coal, is of push nipple construction, having one nipple in the center of the boiler of ample size to insure of free and perfect circulation, and a steady water line for steam boilers. This nipple is of cast iron and larger than has heretofore been used. The openings for fire travel in the fire-pot, intermediate sections, and dome are proportioned to produce combustion and obtain the highest efficiency possible. Our method of erecting these parts is such that the control of the fire travel, both longitudinally and vertically, in the W-D boiler, cannot be excelled.

W-D Double Dome

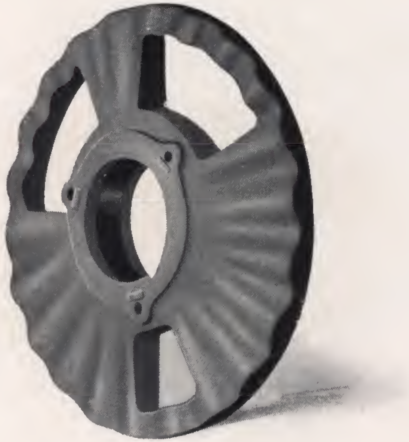
This a dome and intermediate section cast in one piece



THIS dome is larger than anything that has heretofore been manufactured in this style of boiler: PROVIDING larger steam space; better proportioned smoke openings; increased heating surface; less cost in setting, account of water column being cast on dome.

W-D Radially Corrugated Intermediate Section

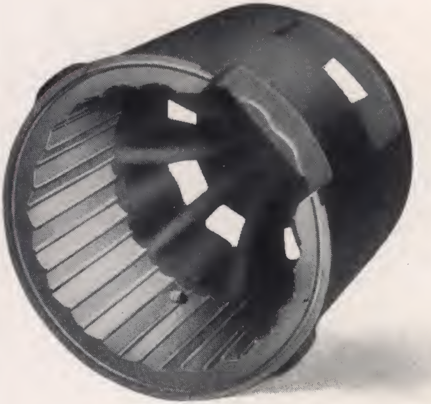
Patent Applied for



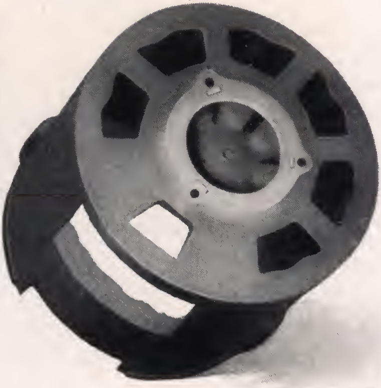
BEING corrugated on under side largely increases the heating surface where it is most efficient. Contains small volume of water, hence rapid circulation. Corrugations, being deeper at outer edge, serve also to retard or baffle the hot gases which in traveling over corrugations assume a whirling motion, producing a good admixture of gases and perfect combustion.

Views of Fire-Pot

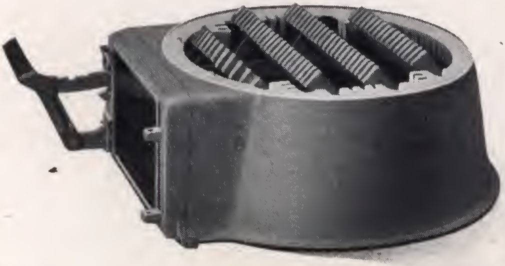
CORRUGATED surface means increased heating surface. Extension rib on top and bottom of corrugations prevents accumulation of ashes and dead fire around sides of fire-pot, which decreases the efficiency of any boiler.



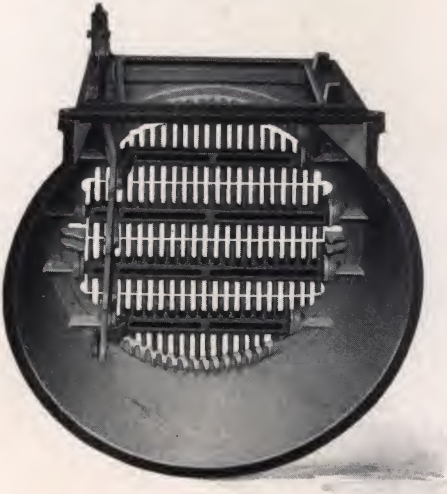
DEEP, thin arms, leading from sides of fire-pot to center opening provide increased heating surface and produce quick circulation.



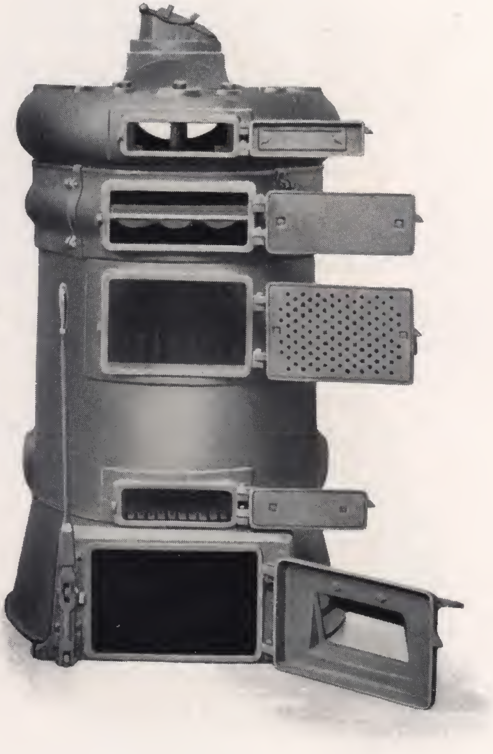
Views of Base



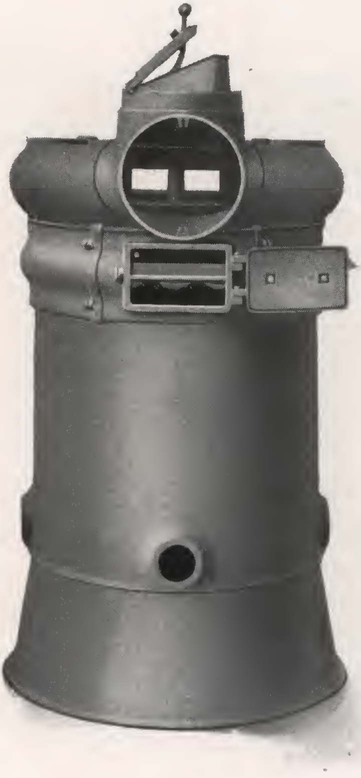
DEEP Ash Pit. Large openings when grates are in dumping position.



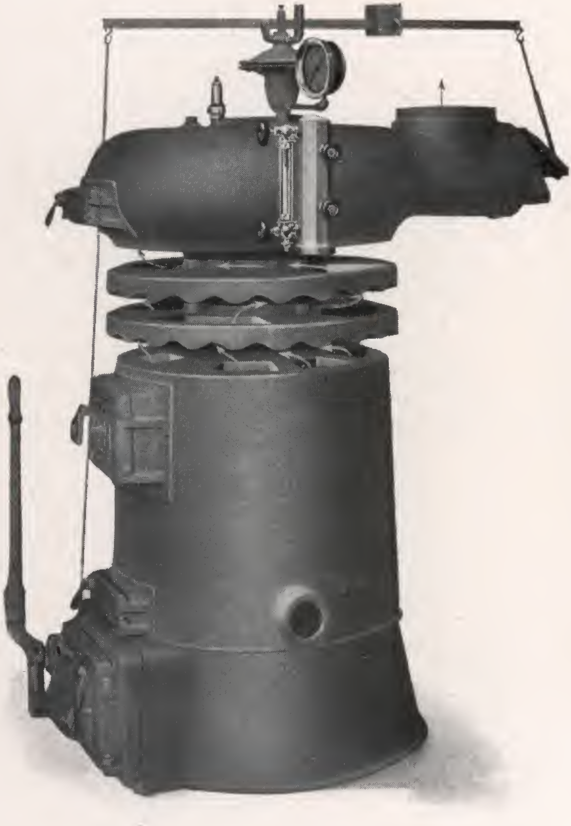
NO bolts or cotter pins to remove when replacing grates. Easily put in place through fire-doors opening.



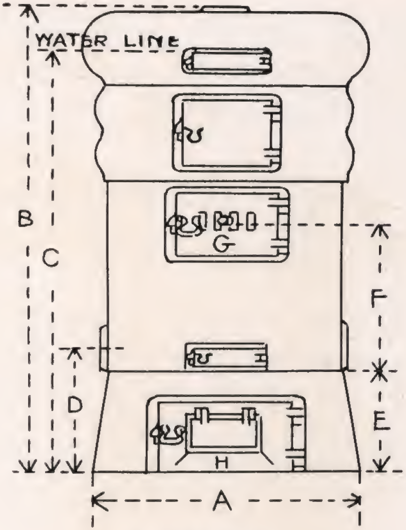
CLEANING W-D Boilers from the front is an easy operation, as indicated by this view.



THE back of W-D Boilers is also just as accessible for cleaning.



STEAM Boiler with Jacket removed, showing how the fire travel is controlled. The hot gases *must* travel four times *across* this boiler in rising from the fire-pot to the chimney.



DIMENSIONS

Steam No.	Water No.	A	B Steam	B Water	C Steam	D	E	F	G	H
161	116	25	49½	46	45	14½	12¼	17¼	8¼ x 10⅞	10 x 12
162	216	25	54	50⅜	49½	14½	12¼	17¼	8¼ x 10⅞	10 x 12
163	316	25	58	54¾	54¾	14½	12¼	17¼	8¼ x 10⅞	10 x 12
181	118	27$\frac{3}{16}$	50½	45¾	45	14¾	12½	17¼	8¼ x 10⅞	10 x 12
182	218	27$\frac{3}{16}$	55	50¼	49¾	14¾	12½	17¼	8¼ x 10⅞	10 x 12
183	318	27$\frac{3}{16}$	59	54½	53¾	14¾	12½	17¼	8¼ x 10⅞	10 x 12
211	121	30½	52½	48½	47	15	12½	18¼	8⅛ x 12½	10 x 15
212	221	30½	56½	52½	50½	15	12½	18¼	8⅛ x 12½	10 x 15
213	321	30½	60½	56½	54½	15	12½	18¼	8⅛ x 12½	10 x 15
241	124	33¼	52½	48½	47	15	12½	18¼	8⅛ x 12½	10 x 15
242	224	33¼	56½	52½	50½	15	12½	18¼	8⅛ x 12½	10 x 15
243	324	33¼	60½	56½	55	15	12½	18¼	8⅛ x 12½	10 x 15
271	127	36¼	54¼	50½	48	16¾	13¼	18⅝	9⅛ x 15⅜	11 x 19
272	227	36¼	59½	55	53	16¾	13¼	18⅝	9⅛ x 15⅜	11 x 19
273	327	36¼	64¼	60	58	16¾	13¼	18⅝	9⅛ x 15⅜	11 x 19
301	130	39¼	55	51½	49½	17	13¼	19	9⅛ x 15⅜	11 x 19
302	230	39¼	59½	56	53¾	17	13¼	19	9⅛ x 15⅜	11 x 19
303	330	39¼	63½	60	58	17	13½	19	9⅛ x 15⅜	11 x 19
341	134	44	55	51½	49½	17½	13¼	19	9⅛ x 15⅜	11 x 19
342	234	44	59½	56	54	17½	13¼	19	9⅛ x 15⅜	11 x 19
343	334	44	64	60½	58	17½	13¼	19	9⅛ x 15⅜	11 x 19

W-D Boilers for Steam

Number of Boiler	Commercial Rating*	Diameter of Grate	Diameter of Smoke Pipe	Outlets Number and Size	Inlets Number and Size
161	250	16-in.	7-in.	1—2-in.	3—2-in.
162	290	16- "	7- "	1—2- "	3—2- "
163	320	16- "	7- "	1—2- "	3—2- "
181	340	18- "	8- "	1—2½-in.	3—2-½ in.
182	390	18- "	8- "	1—2½- "	3—2½- "
183	420	18- "	8- "	1—2½- "	3—2½- "
211	440	21- "	9- "	1—3-in.	3—3-in.
212	530	21- "	9- "	1—3- "	3—3- "
213	575	21- "	9- "	1—3- "	3—3- "
241	600	24- "	10- "	1—3- "	3—3- "
242	700	24- "	10- "	1—3- "	3—3- "
243	750	24- "	10- "	1—3- "	3—3- "
271	790	27- "	11- "	1—4- "	3—4- "
272	910	27- "	11- "	1—4- "	3—4- "
273	980	27- "	11- "	1—4- "	3—4- "
301	1050	30- "	12- "	1—4- "	3—4- "
302	1225	30- "	12- "	1—4- "	3—4- "
303	1350	30- "	12- "	1—4- "	3—4- "
341	1400	34- "	13- "	1—5- "	3—5- "
342	1600	34- "	13- "	1—5- "	3—5- "
343	1720	34- "	13- "	1—5- "	3—5- "

*See page 18.

W-D Boilers for Water

Number of Boiler	Commercial Rating*	Diameter of Grate	Diameter of Smoke Pipe	Outlets Number and Size	Inlets Number and Size
116	420	16-in.	7-in.	3—2-in.	3—2-in.
216	490	16- "	7- "	3—2- "	3—2- "
316	535	16- "	7- "	3—2- "	3—2- "
118	570	18- "	8- "	3—2½-in.	3—2½ in.
218	650	18- "	8- "	3—2½- "	3—2½- "
318	700	18- "	8- "	3—2½- "	3—2½- "
121	735	21- "	9- "	3—3- "	3—3- "
221	885	21- "	9- "	3—3- "	3—3- "
321	950	21- "	9- "	3—3- "	3—3- "
124	1000	24- "	10- "	3—3- "	3—3- "
224	1170	24- "	10- "	3—3- "	3—3- "
324	1250	24- "	10- "	3—3- "	3—3- "
127	1310	27- "	11- "	3—4- "	3—4- "
227	1535	27- "	11- "	3—4- "	3—4- "
327	1635	27- "	11- "	3—4- "	3—4- "
130	1750	30- "	12. "	3—4- "	3—4- "
230	2045	30- "	12- "	3—4- "	3—4- "
330	2250	30- "	12- "	3—4- "	3—4- "
134	2335	34- "	13- "	3—5- "	3—5- "
234	2670	34- "	13- "	3—5- "	3—5- "
334	2870	34- "	13- "	3—5- "	3—5- "

*See page 18.

¶ Note by comparing ratings with other Round boilers ratings on W-D are very conservative.

Notes Important for Computing Boiler Capacities

THE radiating surface must be sufficient to heat the entire building in coldest weather with the water leaving the heater at a temperature of 180 Fahr., or with a steam pressure of 2 lbs., at the heater.

The boiler must be connected to a properly constructed chimney flue with good draft and ample capacity.

The surface of all piping must be included in the radiating surface. In the average building, the surface in the piping will equal about 25% of the surface in the radiators.

If pipe coils are used in place of cast-iron radiators, 25% must be added to the actual surface in the coils.

Where indirect radiation is used, there must be added 75% to the actual surface in all indirect radiators.

If direct-indirect radiators are used, there must be added 50% to the actual surface in all direct indirect radiators.

All boilers are provided with openings for the insertion of a coil to heat water for domestic use. A coil for this purpose requires additional boiler capacity. In a steam boiler, each gallon of water to be heated per hour requires 1¼ sq. ft. of heater capacity. In a water boiler, each gallon requires 2 sq. ft. of heater capacity.

When soft coal is used, or the boiler is to be placed in an extreme corner of the building, a size larger should be used.

When a water boiler is used as a tank heater for supplying water for domestic purposes it will heat as many gallons of water, from 40 deg. to 200 deg , as it will supply in sq. ft. of direct radiation. When a boiler is used for this purpose and it is connected with a water-works system of higher pressure, a pressure-reducing valve should be placed in the cold-water supply pipe.

We recommend some surplus capacity, as additional radiation may be required. We recommend covering the boiler with asbestos cement, which prevents the loss of heat. We also recommend covering the mains with sectional covering to prevent radiation of heat where it is not required.

Fire tools are furnished for all boilers and regular trimmings for steam boilers.

We guarantee our boilers only to the extent of our furnishing new castings for any found defective in manufacture.

Tribune Job Printing Company, Minneapolis, Minn.